Amendments To The Claims:

1. (Currently Amended) A safety and arming apparatus for arming a fuze of a smooth bore projectile, comprising:

a first sensor and a spin rate sensor, the first sensor in cooperative electronic communication with the spin rate sensor, such that, when the first sensor senses a predetermined first condition and the spin rate sensor detects a predetermined second condition, the predetermined second condition being a predetermined number of spins within a predetermined window of time, the fuze is armed, wherein the spin rate sensor comprises:

(a) a counting mechanism for counting each said rotation of the smooth bore projectile as it rotates around its longitudinal axis, the counting mechanism comprising:

(i) spin signal mechanism for generating a spin signal which varies over time as the smooth bore projectile rotates about its axis in the earth's magnetic field and where the magnitude of the spin signal reaches a predetermined threshold a predetermined number of times for each said rotation of the smooth bore projectile;

(ii) a counter operatively connected to the spin signal mechanism for counting the number of times the spin signal reaches its predetermined threshold; and

(b) a spin rate computation mechanism for determining a spin rate of the smooth bore projectile, wherein the spin rate computation mechanism is comprised of a timing mechanism operatively connected to the counter for determining the time for the smooth bore projectile to rotate a predetermined number of times.

2. (Original) The safety and arming apparatus of claim 1, wherein the spin rate sensor is operatively engaged to a primer ignition mechanism and wherein the primer ignition mechanism ignites an electrically actuated primer when the spin rate sensor detects the second condition.

3. (CANCELED)

4. (Currently Amended) The safety and arming apparatus of claim 1 [[3]], wherein the spin signal is a sine wave and the crossings of the x axis by the sine wave are used to determine frequency, which is used to determine spin rate.

5. (Currently Amended) The safety and arming apparatus of claim 1 [[3]], the smooth bore projectile having a spin inducing mechanism, wherein the spin inducing mechanism causes the smooth bore projectile to spin after being fired.

6. (Original) The safety and arming apparatus of claim 5, wherein the spin inducing mechanism is a plurality of canted fins.

7. (Original) The safety and arming apparatus of claim 1, wherein the second condition is a spin rate of about 100 Hertz or less.

8. (Original) The safety and arming apparatus of claim 5, wherein the second condition is a spin rate of about 100 Hertz or less.

9. (Original) The safety and arming apparatus of claim 8, the first sensor being a setback sensor and the first predetermined condition being setback when the smooth bore projectile is fired.

10. (Original) A method of arming a fuze of a smooth bore projectile, comprising:

providing a smooth bore barrel;

inserting a smooth bore projectile in the smooth bore barrel, the smooth bore projectile including a spin inducing mechanism, said spin inducing mechanism being positioned and designed to impart spin upon the smooth bore projectile when said smooth bore projectile is fired into an air stream, a first sensor and a spin rate sensor, the first sensor in cooperative electronic communication with the spin rate sensor;

firing the smooth bore projectile into the air stream at a high speed;

determining whether a first predetermined condition is achieved;

determining whether a second predetermined condition is achieved, wherein the second predetermined condition is a predetermined number of spins within a predetermined window of time; and

arming the fuze if the first and second predetermined conditions are achieved.

11. (Original) The method of claim 10, wherein the second predetermined condition is a spin rate induced by the projectile being fired and entered into the air stream.

12. (Original) The method of claim 10, wherein the spin inducing mechanism is a plurality of canted fins.

13. (Original) The method of claim 11, wherein the first predetermined condition is setback.

14. (Original) The method of claim 10, wherein the second predetermined condition is a spin rate of about 100 hertz or less.